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Class I, HEXAPODA.

Order V, LEPIDOPTERA.

HETEROCERA AMERICANA.

By RICHARD H. STRETCH, E.M.,

WEST SEATTLE, WASH.

A quarter of a century ago the writer had in preparation a monograph of the Bombycidæ of North America, intended as an enlargement and completion of his Zygænidæ and Bombycidæ of North America, published in 1872. Various causes prevented the completion of the work at that time, but the plates were nearly all prepared and in part printed. So much work has been done on the group in the interim that the "Heterocera Americana" as prepared is obsolete; but I have turned the plates over to the editor of this Journal, who thinks them worthy to present to our readers. The plates illustrate the Arctiidæ and their allies. I wish to express my acknowledgments to the gentlemen who assisted me with material and otherwise in former years while the work was in preparation, Messrs. Henry Edwards, B. Neumoegen, E. L. Graef, F. Tepper and others.

EXPLANATION OF PLATES.

(Heterocera Americana, Plates II-XII.)

PLATE II.

1. *Crambidia pallida* Packard.
2. *Utetheisa bella* Linnæus.
3. *Utetheisa ornatrix* Linnæus.
4. *Utetheisa ornatrix* Linnæus.
5. *Utetheisa bella* var.
6. *Utetheisa speciosa* Walker.
7. *Scepsis fulvicolis* Hübner.
8. *Scepsis wrightii* Stretch.
9. *Scepsis mathewi* Grote.
10. *Scepsis edwardsii* Grote.
11. *Psychomorpha epimenis* Drury.
12. *Clemensia* ? *

* Probably *Nola minuscula* Zell.—Editor.

13. *Syntomeida ipomææ* Harris.
14. *Emydia ampla* Grote.
15. *Edwardsia brillians* Neumögen.
16. *Ctenucha sanguinaria* Strecker.
17. *Gnophala vermiculata*, ♂, Grote & Robinson.
18. *Gnophala vermiculata*, ♀, Grote & Robinson.
19. *Gnophala discreta* Stretch.
20. *Gnophala hopfferi* Grote & Robinson.
21. *Dakana atripennis* Grote.
22. *Cosmosoma omphale* Hübner.
23. *Halesidota trigona* Grote.
24. *Pygotenucha harrisii* Grote.
25. *Didasys belæ* Grote.
26. *Eudryas unio* Grote.
27. *Triprocris smithsonianus* Clemens.
28. *Triprocris fusca* H. Edwards.
29. *Harrisina coracina* Clemens.

PLATE III.

1. *Cisthene tenuifascia* Harvey.
2. *Cisthene plumbea* Stretch.
3. *Cisthene unifascia* Grote & Robinson.
4. *Cisthene unifascia* Grote & Robinson.
5. *Byssophaga faustinula* Boisduval.
6. *Byssophaga nexa* Boisduval.
7. *Cisthene subjecta* Walker.
8. *Cisthene subjecta* Walker.
9. *Crocota ostenta* H. Edwards.
10. *Crocota quinaria* Grote.
11. *Crocota choriona* Reakirt.
12. *Crocota opella* Grote.
13. *Crocota opella* Grote.
14. *Crocota leta* Guérin.
15. *Crocota belfrageii* Stretch.
16. *Crocota nigricans*, ♀, Reakirt.
17. *Crocota nigricans*, ♂, Reakirt.
18. *Crocota ferruginosa* Walker.
19. *Crocota costata* Stretch.
20. *Crocota rubicundaria* Hübner.
21. *Crocota rubicundaria* Hübner.
22. *Crocota choriona* Reakirt.
23. *Crocota choriona* Reakirt.
24. *Crocota choriona* Reakirt.
25. *Crocota obscura* Strecker.
26. *Crocota obscura* Strecker.
27. *Crocota* ? *

* An aberration of *aurantica* Hübn., probably not deserving a separate name. — Editor.

28. *Crocota bimaculata* Saunders?
29. *Hypoprepia fucosa* Hübner.*
30. *Hypoprepia fucosa* Hübner.†
31. *Hypoprepia fucosa* Hübner.‡
32. *Cisthene* ? *lactea* Stretch.
33. *Euphanessa mendica* Walker.
34. *Lithosia bicolor* Grote.
35. *Lithosia cephalica* Grote & Robinson.
36. *Lithosia candida* H. Edwards.
37. *Lithosia casta* Sanborn.
38. *Harrisina* (*Pygotenucha*) *funerea* Grote.
39. *Ameria unicolor* Robinson.
40. *Harrisina americana* Guérin.
41. *Harrisina metallica* Stretch.
42. *Harrisina australis* Stretch.
43. *Clemensia irrorata* H. Edwards.
44. *Clemensia irrorata* H. Edwards.
45. *Clemensia umbrata* Packard.
46. *Pyromorpha dimidiata* Herrich-Schäffer?
47. *Triprocris marteni* French.
48. *Acoloithus falsarius* Clemens.
49. *Lycomorpha palmerii* Packard.
50. *Anatolmis fulgens* H. Edwards.
51. *Lycomorpha pholus* Drury.
52. *Lycomorpha miniata* Packard.
53. *Lycomorpha constans* H. Edwards.
54. *Lycomorpha constans* H. Edwards.
55. *Cydosia imitella* Stretch.
56. *Cydosia aurivitta* Grote & Robinson.

PLATE IV.

1. *Epicallia virginalis* Boisduval.
2. *Epicallia virginalis* Boisduval.
3. *Epicallia virginalis* var. *luttata* Boisduval.
4. *Platarctia parthenos* Harris.
5. *Euprepia yarrovi* Stretch.
6. *Callimorpha lecontei* Boisduval.
7. *Callimorpha lecontei* Boisduval.
8. *Callimorpha reversa* Stretch.
9. *Callimorpha lecontei* Boisduval.
10. *Callimorpha reversa* Stretch.
11. *Callimorpha interrupto-marginata* de Bauvois.
12. *Callimorpha clymene* Brown.
13. *Leptarctia dimidiata*, ♂, Stretch.

* Normal form. — Editor.

† *H. miniata* Kirby. — Editor.

‡ *H. cadaverosa* Strk. — Editor.

14. *Leptarctia dimidiata*, ♂, Stretch.
15. *Leptarctia dimidiata*, ♂, Stretch.
16. *Leptarctia californiæ* Walker (*leni* Boisd.).
17. *Leptarctia californiæ* Walker.
18. *Leptarctia californiæ* Walker.
19. *Leptarctia adnata* Boisdual.
20. *Leptarctia adnata* Boisdual.
21. *Leptarctia californiæ* Walker.
22. *Leptarctia californiæ* Walker.
23. *Leptarctia decia* Boisdual.

PLATE V.

1. *Arctia docta*, var. *arizoniensis*, ♂, Stretch.
2. *Arctia docta*, var. *autholea*, ♂, Boisdual.
3. *Arctia docta*, var. *autholea*, ♀, Boisdual.
4. *Arctia superba*, ♂, Stretch.
5. *Arctia virguncula*, ♂, Kirby.
6. *Arctia bolanderi*, ♂, Stretch.
7. *Arctia nais* Drury, var. *decorata*, ♀, Saunders. Copy from Grote.
8. *Arctia nevadensis*, ♂, Grote. Copy from Grote.
9. *Arctia nevadensis*, ♂, Grote.
10. *Arctia nevadensis*, ♀, Grote.
11. *Arctia anna*, ♀, Grote.
12. *Arctia persephone*, ♂, Grote. Copy from Grote.
13. *Arctia virgo*, ♂, Kirby.
14. *Arctia virgo*, ♀, Kirby, var. *simplex* Stretch.
15. *Arctia saundersii*, ♂, Grote.
16. *Arctia arge*, ♂, Drury.
17. *Arctia arge*, ♀, Drury.
18. *Arctia blakei*, ♂, Grote.
19. *Arctia phalerata*, ♂, Harris.
20. *Arctia phalerata*, ♂, Harris.
21. *Arctia phalerata*, var. *incarnata*, ♂, n. var.
22. *Arctia intermedia*, ♂, Stretch.
23. *Arctia intermedia*, ♂, var. *stretchii* Grote.
24. *Arctia rectilinea* French.
25. *Arctia gelida*, var. *speciosissima* Moeschler.
26. *Arctia intermedia*, var. *circa*, n. var.

PLATE VI.

1. *Arctia achaia*, ♂, var. *ornata* Packard.
2. *Arctia achaia*, ♀, var. *ornata* Packard.
3. *Arctia achaia*, ♂, var. *maculosa*, n. var.
4. *Arctia achaia*, ♀, var. *maculosa*, n. var.
5. *Arctia achaia*, ♂, Boisdual, type.
6. *Arctia achaia*, ♀, Boisdual.
7. *Arctia achaia*, ♂, var. *ochracea* Stretch.

8. *Arctia achaia*, ♂, var. *rivulosa*, n. var.
9. *Arctia achaia*, ♀, var. *rivulosa*, n. var.
10. *Arctia achaia*, ♂, var. *ochracea-rivulosa*, n. var.
11. *Arctia achaia*, ♀, var. *ochracea* Stretch.
12. *Arctia dahurica*, ♂, Boisduval.
13. *Arctia dahurica*, ♀, Boisduval.
14. *Arctia obliterated*, ♂, Stretch.
15. *Arctia achaia*, ♂, var. *ochracea*, aberration.
16. *Euprepia caja*, ♀, var. *americana* Harris.
17. *Kodiosoma tricolor* Stretch.
18. *Kodiosoma eazsii* Stretch.
19. *Kodiosoma niger* Stretch.
20. *Kodiosoma fulva* Stretch.
21. *Nemeophila plantaginis*, ♂, Linn., var. *geometrica* Grote. Copy from Grote.
22. *Nemeophila plantaginis*, ♂, var. *cichorii* Grote.
23. *Nemeophila plantaginis*, ♂, var. *cæspitis* Grote.
24. *Nemeophila plantaginis*, ♂, var. *alascensis*, n. var.*
25. *Nemeophila plantaginis*, ♂, var. *alascensis*, n. var.
26. *Nemeophila plantaginis*, ♂, var. *alascensis*, n. var.
27. *Nemeophila plantaginis*, ♀, var. *alascensis*, n. var.
28. *Nemeophila plantaginis*, ♀, var. *alascensis*, n. var.

PLATE VII.

1. *Arctia docta*, var. *autholea*, ♀, Boisduval.
2. *Arctia nais*, ♀, var. *decorata* Saunders.
3. *Arctia nais*, ♀, var. *decorata* Saunders.
4. *Arctia phalerata*, ♂, var. *incarnata* Stretch.
5. *Arctia phalerata*, ♂, var. *incarnata* Stretch.
6. *Arctia elongata*, ♀, Stretch.
7. *Arctia michabo*, ♂, Grote.
8. *Arctia dahurica*, ♂, Boisduval.
9. *Arctia williamsii*, ♀, Dodge. Copy from Dodge.
10. *Arctia phyllira*, ♀, Drury. Copy from Drury.
11. *Arctia nais*, ♂, Drury. Copy from Drury.
12. *Arctia placentia*, ♂, Hübner (*phyllira* Hüb.). Copy from Hübner.
13. *Arctia phalerata*, ♂, Harris (*nais* Hübner). Copy from Hübner.
14. *Arctia figurata*, ♂, Drury. Copy from Drury.
15. *Arctia quensellii*, ♀, Geyer. Copy from Geyer.
16. *Arctia figurata*, ♂, var. *celia* Saunders.
17. *Arctia figurata*, ♀, var. *celia* Saunders.
18. *Arctia phyllira*, ♂, Drury.
19. *Arctia phyllira*, ♀, Drury.
20. *Arctia placentia*, ♂, Sm.-Abbott.
21. *Arctia placentia*, ♀, Sm.-Abbott.
22. *Arctia figurata*, ♂, var. *pallida* Strecker. Copy from Strecker.

* This is what we have called var. *modesta* Pack. — Editor.

23. *Arctia cervinoides*, ♂, Strecker. Copy from Strecker.
24. *Arctia persephone*, ♂, Grote.
25. *Euprepia opulenta*, ♂, Hy. Edwards.

PLATE VIII.

1. *Arctia geneura*, ♂, Strecker. Copy from Strecker.
2. *Arctia rectilinea*, ♂, var. *conspicua*, n. var.
3. *Arctia docta*, ♂, Walker.
4. *Arctia virgo*, ♂, var. *simplex* Stretch.
5. *Arctia virgo*, ♀, Linnæus.
6. *Arctia blakei*, ♂, Grote.
7. *Arctia michabo*, ♂, Grote.
8. *Arctia michabo*, ♀, Grote.
9. *Arctia michabo*, ♀, Grote.
10. *Arctia approximata*, ♀, Stretch.
11. *Arctia intermedia*, var. *stretchii* Grote.
12. *Arctia nais*, ♂, Drury.*
13. *Arctia nais*, ♀, Drury.†
15. *Arctia nais*, ♀, var. *decorata* Saunders.*
16. *Arctia phalerata*, ♀, Harris.‡
17. *Arctia phalerata*, ♀, Harris.*
18. *Arctia phalerata*, ♀, var. *pulcherrima*, n. var.§
19. *Arctia phalerata*, ♀, var. *pulcherrima* n. var.
20. *Arctia arge*, ♂, var. *strigosa* Stretch.
21. *Arctia virguncula*, ♂, Kirby.
22. *Arctia nais*, var. *decorata* (*radians* of Walker).
23. *Arctia figurata*, ♀, var. *snowi* Grote.
24. *Arctia placentia*, ♀, var. *flammea* Neumögen.
25. *Arctia figurata*, ♂, var. *excelsa* Neumögen.

PLATE IX.

1. *Callimorpha lecontei*, var. *contigua* Walker.
2. *Callimorpha lecontei*, var. *confinis* Walker.
3. *Callimorpha lecontei*, var. *montana* Neumögen.
4. *Arctia figurata*, ♀, Drury.
5. *Arctia determinata*, ♂, Neumögen.
6. *Arctia incorrupta*, ♂, type, H. Edwards.
7. *Arctia incorrupta*, ♂, H. Edwards.
8. *Arctia incorrupta*, ♂, var. *ochracea* Neumögen.
9. *Arctia incorrupta*, ♀, H. Edwards.

* This is *radians* Walk. — Editor.

† This appears to be a ♂ of *decorata*. No. 14 is omitted from the text. It represents a ♀ *decorata*. — Editor.

‡ We should call this the ♀ of *nais*. — Editor.

§ We have considered this to be the usual ♀ of *phalerata*. — Editor.

10. *Arctia complicata*, ♂, Walker.
11. *Arctia figurata*, ♂, var. *celia* Saunders.
12. *Arctia placentea*, ♀, Sm.-Abbott.
13. *Arctia placentia*, ♀, Sm.-Abbott. Copy from Smith and Abbott.
14. *Arctia persephone*, ♂, Grote.
15. *Arctia persephone*, ♂, Grote.
16. *Arctia figurata*, ♂, var. *f.-pallida* Strecker.
17. *Leptarctia californica* Walk.
18. *Arctia gelida*, ♂, Moeschler.
19. *Callimorpha reversa* Stretch.
20. *Callimorpha reversa* Stretch.*
21. *Callimorpha reversa* Stretch.
22. *Callimorpha lecontei* Boisduval (hybrid).
23. *Callimorpha lecontei*, var. *fulvicosta* Clem.

PLATE X.

1. *Hyphantria cunea*, ♂, Drury, var. *textor* Harris.
2. *Hyphantria cunea*, ♂, Drury, var. *textor* Harris.
3. *Hyphantria cunea*, ♂, Drury, var. *punctata* Fitch.
4. *Hyphantria cunea*, ♂, Drury type.
5. *Seiartia clio*, ♀, Packard.
6. *Euchaetes egle*, ♀, Drury.
7. *Euchaetes elegans*, ♂, Stretch.
8. *Euchaetes collaris*, ♀, Fitch.
9. *Euchaetes oregonensis*, ♂, Stretch.
10. *Euchaetes oregonensis* Stretch.
11. *Leucarctia albida*, ♂, Stretch.
12. *Leucarctia acraea*, ♀, Drury.
13. *Leucarctia acraea*, ♂, Drury.
14. *Spilosoma vestalis*, ♀, Packard.
15. *Spilosoma latipennis*, ♀, Stretch.
16. *Spilosoma virginica*, ♀, Fabricius.
17. *Antarctia rufula*, ♂, Boisduval.
18. *Antarctia rufula*, ♂, Boisduval.
19. *Antarctia rufula*, ♂, Boisduval.
20. *Antarctia rufula*, ♀, Boisduval.
21. *Pyrharcia isabella*, ♀, Sm.-Abbott.
22. *Pyrharcia isabella*, ♂, Sm.-Abbott, var. *californica*, larva uniform dark gray.
23. *Pyrharcia isabella*, ♂, Sm.-Abbott.
24. *Phragmatobia fuliginosa*, ♂, Harris.
25. *Phragmatobia fuliginosa*, ♀, Harris.

PLATE XI.

1. *Halisidota argentata*, ♀, Packard.
2. *Halisidota sobrina*, ♂, Stretch.

* This is *C. confusa* Lyman. — Editor.

3. *Halisidota tessallata*, ♂, Sm.-Abbot.
4. *Halisidota maculata*, ♀, Harris.
5. *Halisidota maculata*, ♂, Harris.
6. *Halisidota ingens*, ♀, H. Edwards.
7. *Halisidota edwardsii*, ♀, Packard.
8. *Halisidota edwardsii*, ♀, var. *labecula* Grote.
9. *Halisidota ambigua*, ♂, Strecker. Copy of Strecker.
10. *Halisidota caryæ*, ♂, Harris.
11. *Halisidota roseata*, ♂, Walker.*
12. *Halisidota roseata*, ♂, Walker.†
13. *Arachnis picta*, ♂, Packard.
14. *Seiarctia echo*, ♀, Sm.-Abbot. Copy of Sm.-Abbot.
15. *Ecpantheria scribonia*, ♂, Stoll.
16. *Ecpantheria scribonia*, ♂, Stoll.
17. *Ecpantheria scribonia*, ♂, Stoll.

PLATE XII.

1. *Nemeophila chichorii* Grote & Robinson.
2. *Nemeophila petrosa* Walker.
3. *Nemeophila geometrica* Grote.
4. *Arctia pallida*, ♀, Packard.‡
5. *Arctia pallida*, ♂, Packard.‡
6. *Phragmatobia rubricosa*, ♂, Harris.
7. *Phragmatobia rubricosa*, ♀, Harris.
8. *Phragmatobia assimilans* Walker. Walker's type.
9. *Antarctia proba* H. Edwards.
10. *Antarctia rubra*, ♂, Neumögen.
11. *Antarctia rubra*, ♀, Neumögen.
12. *Phragmatobia dubia* Neumögen.
13. *Euchætes vivida* Grote.
14. *Euchætes eglenensis* Clemens.
15. *Euchætes nivalis*, new species.§
16. *Euchætes collaris* Fitch.
17. *Euchætes pudens* H. Edwards.
18. *Arachnis semiclara*, new species.||
19. *Euchætes perlevis* Grote.
20. *Euchætes zonalis* Grote.
21. *Euchætes spraguei* Grote.
22. *Leucarctia? permaculata* Packard.

* This is *Euerythra trimaculata* Smith. — Editor.

† This is *E. phasma* Harvey. — Editor.

‡ Considered to be aberrations of *Hyphantria cunea*. — Editor.

§ White form of *eglenensis*. — Editor.

|| Nearest to *A. albescens* Hampson from Guatemala and possibly the ♀ of it; or it may be an *Ecpantheria* near *suffusa* Schaus. The spurs of hind tibiæ which separate *Arachnis* and *Ecpantheria* are not shown. — Editor.

23. *Euhalesidota pura* Neumögen.
 24. *Halesidota ambigua* Strecker.
 25. *Halesidota mixta* Neumögen.
 26. *Halesidota significans* H. Edwards.
 27. *Phryganidia californica* Packard.
 28. *Alypia maccullochii* Kirby.
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ON THE SPECIFIC VALIDITY OF *THANAOS AUSONIUS* LINTNER.

BY JOHN H. COOK,

ALBANY, N. Y.

PLATE III.

During the last four years I have been searching for *Thanaos ausonius* (Lintn.) on the pine barrens west of Albany, N. Y. The individual which Lintner described under that name was taken in this locality, and it seemed reasonable to expect it here if anywhere. Over five hundred butterflies belonging to this genus were taken, of which two hundred and eleven were *T. martialis*. No "*ausonius*" appeared to reward my efforts.

At Dr. Dyar's suggestion I made a comparative study of *martialis* and *icelus* with a view to determining, if possible, whether or not *ausonius* is entitled to specific distinction. This inquiry has been diligently prosecuted, and the results are here given.

A glance at the genitalia of *ausonius** was sufficient to prove it distinct from *icelus* and to show that if not a good species it must be regarded as a sport of *martialis*. From this species it was separated by Lintner on the grounds of its small size, and the absence of the fenestrate spots on the primaries; the other characters "distinguishing" it being of comparatively little importance.

Considering the genitalia of the greatest morphological value I first compared the tip of the right clasp of "*ausonius*" with the figure thereof given in Scudder's "Butterflies of the Eastern United States and Canada." This figure I found to be measurably accurate though somewhat diagrammatic. I next compared the tip of the left clasp of "*ausonius*" with Scudder's figure of the left clasp of *martialis*, and

* The type in the Lintner memorial collection was studied in detail by the writer.





















